

**California Carbon Capture and Storage
Review Panel**

**TECHNICAL ADVISORY COMMITTEE
REPORT**

**Public Outreach Considerations for CCS
in California**

AUGUST 11, 2010

CALIFORNIA CARBON CAPTURE AND STORAGE REVIEW PANEL

Other white papers for the panel will include

Monitoring, Verification, and Reporting Overview

Review of Saline Formation Storage Potential in California

Options for Permitting Carbon Capture and Sequestration Projects in California

Enhanced Oil Recovery as Carbon Dioxide Sequestration

Carbon Dioxide Pipelines

Approaches to Pore Space Rights

Sequestration Risk History

Long-Term Stewardship and Long-Term Liability in the Sequestration of CO₂

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Introduction

Undertaking carbon capture and sequestration (CCS) in California will require significant public outreach and education to explain the technology and its role in the state's climate and energy policies, and to assure informed public participation. This paper briefly describes CCS outreach activities by three agencies with a major role in CCS policymaking: (1) the California Energy Commission, (2) the California Air Resources Board, and (3) the California Public Utilities Commission. General recommendations for undertaking public outreach for CCS in California are included at the paper's end.

Public Outreach by the California Energy Commission

Through its Public Interest Energy Research (PIER) program, the California Energy Commission operates a comprehensive set of global climate change research projects spanning regional impacts assessments, mitigation, and adaptation. Supporting public outreach activities include the California Climate Change web portal and an annual climate change research conference attended by more than 400 people.

In the area of CCS specifically, the PIER program's research and outreach efforts are chiefly conducted through the West Coast Regional Carbon Sequestration Partnership (WESTCARB), which is funded by the U.S. Department of Energy (DOE) and managed by the California Energy Commission (which also cofunds the partnership). Since 2003, WESTCARB has conducted an active program of public education and outreach in seven western states (AK, AZ, CA, HI, NV, OR, and WA) and one Canadian province (BC). The California Energy Commission also independently funded researchers at the University of California–Berkeley to examine the factors contributing to public perceptions toward CCS.

WESTCARB Public Outreach Activities

Using a variety of media, WESTCARB outreach activities have targeted multiple stakeholder groups including the research community, policymakers, regulators, industrial partners, educators, the inquisitive public, and communities near proposed field projects. WESTCARB's outreach program to date – coordinated by the California Energy Commission's Media Office – has included the following activities:

Website

WESTCARB's website (<http://www.westcarb.org>) conveys current information on CCS technology, project activities, and links to news stories, climate change reports, presentations, and study results.

Fact sheets and primers

Single-sheet summaries are available on WESTCARB goals and activities and on the fundamentals of carbon sequestration, including CO₂ capture from industrial point sources, pipeline transportation, geologic storage, and terrestrial sequestration. WESTCARB also provides facts sheet for briefing policymakers and for each field project, which are updated annually for the duration of the project and are posted on the WESTCARB website.

Annual business meetings (open to the public)

WESTCARB's annual business meetings cover the full scope of WESTCARB's activities, as well as regional and national CCS-related topics. Presentations from each annual meeting are posted on WESTCARB's website (<http://www.westcarb.org/technicalpresentations.html>).

The meetings are held in different locations to encourage participation by the organizations and policymakers of the member states. Past meetings have been held in Portland, Oregon; Berkeley, California; Phoenix and Scottsdale, Arizona; Seattle, Washington; and Anchorage, Alaska. The 2010 meeting is scheduled for October 19–20 in Sacramento, California, to dovetail with the final meeting of the California Carbon Capture and Storage Review Panel on October 21, 2010.

Public educational workshops

In conjunction with some of its earlier business meetings, WESTCARB conducted public workshops with expert speakers covering climate change and CCS fundamentals. Program content and pre-meeting mailings were tailored to stakeholder issues of regional significance (e.g., forest management in the Pacific Northwest). More recently, WESTCARB has teamed with universities and environmental organizations that have organized informational workshops on CCS activities and issues in California. These workshops have been well attended, typically drawing 100–200 participants.

Public meetings for communities near project sites

With support from field project partners, WESTCARB has held community meetings on geologic CO₂ storage assessments in Holbrook and Kykotsmovi, Arizona; and Thornton, Stockton, and Rio Vista, California. WESTCARB has held community meetings for forestry-based terrestrial sequestration projects in Lakeport, Oregon, and Anderson, California.

Participation in major CCS conferences and forums

WESTCARB-sponsored research is disseminated at CCS conferences and forums including DOE's Annual Conference on Carbon Capture and Sequestration, IEA's International Conference on Greenhouse Gas Control Technologies, and the Groundwater Protection Council's Annual Forum. WESTCARB researchers have worked with the California Climate Action Registry to develop and test protocols for terrestrial carbon sequestration projects.

Media interviews

Requests by reporters for information or interviews have resulted in numerous articles featuring WESTCARB's work and have helped spread awareness of CCS. In 2008, for example, WESTCARB's Technical Director was interviewed for "The Morning Report" on KQED radio. Earlier, he had appeared on "TechTV." In 2009, several WESTCARB researchers wrote articles for *Southwest Hydrology* magazine, which devoted an issue to CCS and featured an article on WESTCARB's Arizona geologic characterization well. WESTCARB's terrestrial sequestration researchers and project site landowners in Shasta County, California, were featured in an award-winning public television documentary, now available on DVD.

News releases for major announcements pertaining to WESTCARB have been issued by DOE, Governor Schwarzenegger's Office, the California Energy Commission, and Lawrence Berkeley National Laboratory. WESTCARB also supports its project partners in drafting news releases related to CCS pilots, as needed.

Middle and high school teacher trainings

WESTCARB has spoken at two teacher training workshops in California in conjunction with the Keystone Center's "CSI: Climate Status Investigations." The trainings, which present CCS within the context of energy use and climate change, provide teachers with exercises and curricula to use in the classroom.

Participation in DOE Regional Carbon Sequestration Partnerships' Outreach Working Group

Outreach coordinators for DOE's seven Regional Carbon Sequestration Partnerships regularly hold conference calls or meet face-to-face to share experiences and ideas and to undertake joint projects. Most notable was the DOE *Best Practices Manual for Public Outreach and Education for Carbon Storage Projects*, published in December 2009.

CCS workshops for the California Integrated Energy Policy Report

WESTCARB personnel organized California Energy Commission public workshops on CCS in conjunction with the biennial Integrated Energy Policy Report (IEPR) in 2005, 2007, and 2009. As part of the 2007 IEPR cycle, WESTCARB staff led workshops, commissioned topical white papers by CCS subject matter experts, and wrote the synthesis report, *Geologic Carbon Sequestration Strategies for California: Report to the Legislature*, fulfilling a requirement of Assembly Bill 1925, which was passed unanimously by the Legislature in 2006 (the same session that produced Assembly Bill 32, the Global Warming Solutions Act of 2006).

Carbon Sequestration Atlas of the United States and Canada

WESTCARB contributes to each edition of DOE's "Carbon Atlas" by providing maps, photos, text, and data tables that reflect the Partnership's findings. The award-winning Carbon Atlas is widely distributed on Capitol Hill.

Public Outreach by the California Air Resources Board

The California Environmental Protection Agency's Air Resources Board (ARB) holds the primary responsibility for monitoring and regulating sources of greenhouse gases in order to reduce emissions.

ARB has long history of conducting education and outreach campaigns in an effort to support an understanding of, and compliance with, California's various air quality regulations. This experience base includes DMV inserts and smog station placards, fact sheets, webcasts and workshops, FAQs, news releases and an RSS news feed, and an e-mail service where subscribers can select from multiple topics pertaining to air quality.

In preparing the AB 32 Climate Change Scoping Plan, ARB undertook a broad and extensive public outreach and engagement effort involving dozens of workshops, meetings, and webcasts throughout the state. Hundreds of Californians attended these events and provided suggestions for improving the Plan. Additionally, ARB received thousands of letters, postcards, e-mails, and other comments. All told, more than 42,000 people voiced an opinion on the Plan.

Public outreach remains an important element in the implementation of AB 32, which calls for a steering committee of state agencies, the state's air districts, and public and private entities to "develop a coordinated array of messages and draw upon a wide range of messengers to

deliver them.” Further directive notes, “These will include regional and local governments whose individual outreach campaigns can reinforce the broader State outreach themes while also delivering more targeted messages directly tied to specific local and regional programs.”

Inclusiveness and outreach were also embodied in the AB 32 legislation, with the call for formation of an Environmental Justice Advisory Committee chartered to advise ARB on the Climate Change Scoping Plan and on other pertinent matters in the implementation of AB 32.

Although CCS is not viewed as a centerpiece of ARB’s compliance strategy for AB 32 (it’s in the “Research” section of the Scoping Plan), sustainable forest management practices (for terrestrial sequestration) has been included among the “Recommended Actions.” ARB has sought to increase CCS knowledge internally and publicly through presentations in the “Chair’s Seminar Series” (webcast talks) and through other venues. As the role of CCS grows in the future as California reduces its GHG emissions cap, ARB will step up its public processes for CCS education and outreach.

Public Outreach by the California Public Utilities Commission

The California Public Utilities Commission (CPUC) may address CCS education and outreach in conjunction with its activities regulating investor-owned electric and natural gas utilities operating in California. Support for CCS research and development is noted in the RD&D section of the Energy Action Plan, which CPUC developed jointly with the California Energy Commission.

CPUC has a deep experience base in consumer education and outreach, including a Public Advisor’s Office and a separate Business and Community Outreach program to assist California communities, local governments, and businesses. The Public Advisor’s Office regularly resolves complaints and administers public participation hearings on controversial open proceedings before the CPUC. The Business and Community Outreach program sponsors five Outreach Officers to represent the agency throughout California and to assist communities in understanding CPUC programs and policies. These outreach officers schedule workshops and presentations in communities to explain current policy efforts, actively solicit consumers feedback, and resolve issues before complaints escalate.

On January 21, 2010, as part of its ongoing “21st Century Thought Leaders” series of public forums, CPUC held a panel discussion on “Carbon Capture and Storage and the Role It Plays in Climate Change Mitigation.” The panel discussion was aimed at providing broader public understanding of CCS strategies. This event is now available for viewing in the video webcast archive of the series.¹

Recommendations for CCS Public Outreach in California

Agency and Developer Roles:

¹ See http://www.cpuc.ca.gov/PUC/hottopics/7other/081027_thoughtseries.htm.

In California, where multiple agencies and non-governmental organizations will be involved in CCS-related public communications, the scope and focus of their efforts will be reflective of the primary role(s) they fulfill.

For policy-oriented agencies, CCS outreach will benefit by being positioned within the context of other major policy initiatives, principally energy supply and demand and the state's plan to reduce greenhouse gases to mitigate climate change. When CCS is presented in this manner, the public can better weigh its potential to contribute to the state's goal of fostering economic growth and opportunity while protecting human health and the environment.

In developing policies for CCS, California's agencies will want to use transparent processes and provide multiple opportunities for public input. Companion efforts to further public awareness and education on CCS will engender meaningful public engagement.

Permitting agencies will undoubtedly focus on providing a clear delineation of the permitting process – what steps are followed to obtain a permit, what areas the permit covers, and how the permit is administered – so that the public can understand the agency's response to the proposer's application. Such agencies can further public understanding by furnishing materials explaining the fundamentals for CCS and by allowing for extra time at public meetings for basic educational purposes.

For California's educators, CCS represents an opportunity to develop or expand curricula to provide students with the education and training to find gainful employment in this newly emerging field. A broad range of professionals work on CCS, including geologists, hydrologists, engineers, drill rig crews, and chemists. A robust CCS industry will create new well-paying jobs, and teachers and professors may need to receive additional training to be able to teach and mentor their students. Already, many California schools and universities partner with industry practitioners to conduct field research. The involvement of teachers and students, particularly in early CCS projects, should be encouraged.

In addition to serving students with professional pursuits, California educators can help create a populace well informed on CCS fundamentals (as well as other climate change mitigation measures), contributing toward sound energy and climate policymaking.

CCS project developers will interact with stakeholders on many levels, however, outreach to communities surrounding proposed project sites will be particularly important and should be as inclusive as possible. Good community relations is an essential element to sustainable business success, and although each community is unique, major groups to consider in outreach planning include elected and safety officials; neighboring landowners and tenants; business, civic, environmental, and religious groups; neighborhood associations; schoolteachers; and local media. Contacts within such groups or organizations can assist with public notice of local meetings.

Process Recommendations:

Allocate sufficient time and resources to support an inclusive outreach effort

Engage and provide a public forum for knowledgeable independent experts on CCS subjects

Communicate the scope, methods, and findings of risk assessments in an honest and open manner

Communicate in the language and through the channels most familiar to target audiences

Provide ample and non-intimidating vehicles for public comment

Keep outreach materials up-to-date and aligned with policy and project developments

Look for opportunities to share and coordinate outreach materials among organizations

Select Bibliography

1. *Best Practices for Public Outreach and Education of Carbon Storage Projects*, first edition, DOE/NETL-2009/1391, December 2009.
2. WRI CCS Community Engagement Guidelines, Workshop Summary, April 23–24, 2009.
3. *Guidelines for public consultation and participation in CCS projects*, Bellona Europa, November 2009.